

REMARKS

Claims 1-3 and 6-12 are pending. Claims 1, 6 and 7 have been amended. Claims 8-12 are new. Claims 4 and 5 were previously withdrawn.

Claims 6 and 7 were objected to for informalities. Applicants have amended those claims accordingly to correct those informalities.

Claims 1-3, 6 and 7 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 6,014,318 (Takeda). The rejection is traversed. Applicants have amended claim 1 to clarify the claimed subject matter.

Claim 1 now recites a step portion that is formed in the mounting substrate. An example of that is shown in FIGs. 1A and 1B, where step portion 15 is formed in the mounting substrate 11. In other words, the step portion 15 is formed in the material of the mounting substrate 11 itself. As discussed, for example, on page 6 of the present application, having a step portion that is formed in the material of the mounting substrate itself increases the adhesive strength between the mounting substrate and the sealing resin. The Takeda patent neither discloses nor suggests that feature.

The Takeda patent discloses a package structure that includes a substrate 101. (*See* FIG. 4) Chips 121, 122 are mounted on the substrate 101. Conductive elements are exposed at upper and lower surfaces of the substrate 101. Solder bumps 112 are exposed at the lower surface of the package structure. Portions of the upper and side surfaces of the substrate 101 are covered with sealing resin 103. A “step” is formed by an edge of the conductive element and the board 101 at a periphery of the board 101. However, that “step” is not formed in the mounting substrate, as is recited in claim 1. Instead, the “step” in FIG. 4 of the Takeda patent is formed by two discrete elements: the conductive element and the board 101. The peripheral edge of the substrate 101 does not include a step portion formed therein, as is now recited in claim 1.

Claim 1, as amended, should be allowable for at least the foregoing reasons.

Claims 2, 3, 6 and 7 depend directly or indirectly from claim 1 and, therefore, should be allowable for at least the same reasons as claim 1.

New claim 8 also should be allowable over the Takeda patent for at least the following reasons.

New claim 8 recites that an external side surface of the sealing resin and a side surface of the mounting substrate are located on a substantially same plane. An example of that is shown in FIG. 1B of the present application where an external side surface of the sealing resin 18 and a side surface of the mounting substrate 11 are located in substantially the same plane. In certain implementations, that feature contributes to a reduction in the overall size of a semiconductor device. The Takeda patent neither discloses nor suggests that feature.

In FIG. 4 of the Takeda patent, the external side surface of the sealing resin 103 clearly is not located in substantially the same plane as the side surface of the substrate 101. The external side surface of the sealing resin 103 has an upper portion (angled) and a lower portion (substantially vertical), neither of which is located in substantially the same plane as the side surface of substrate 101. The lower portion (substantially vertical) of the external side surface of the sealing resin appears to be approximately parallel to the side surface of the substrate 101. However, that lower portion (substantially vertical) is horizontally displaced from the side surface of substrate 101 and, therefore, is not located in substantially the same plane as the side surface of substrate 101. The upper portion (angled) also is not parallel to the side surface of substrate 101 and, therefore, is not located in substantially the same plane as the side surface of substrate 101.

New claim 8 should be allowable for at least the foregoing reasons.

New claims 9-12 depend directly or indirectly from claim 8 and should be allowable for at least the same reasons as claim 8.

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

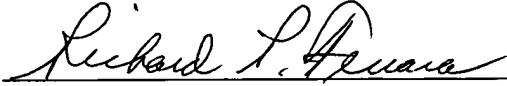
Conclusion

The pending claims are urged to be allowable. Issuance of a notice of allowance is proper and is urged.

No fee is believed to be due. However, please apply any charges or credits to deposit account 06-1050.

Respectfully submitted,

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